TNBC is a molecular subtype that accounts for approximately 15%–20% of breast cancers (5). Neoadjuvant therapy is a crucial part of the treatment of early-stage BC, and both tumor cellularity and improving long-term survival outcomes are key factors in its use. Gonzeaux et al. (2017) published an overview and systematic review of TNBC, and several novel strategies including immunotherapy are being explored to improve outcomes for this cohort (6). However, the efficacy of PFS or OS in the neoadjuvant setting of TNBC has yet to be evaluated.

The dataset of PFS and OS for the neoadjuvant treatment of TNBC was reviewed in this study, and the survival analyses were used to measure the strength of associations between PFS and OS.

Results

- Individual-level association
  - The analysis of the individual-level association between PFS and OS was based on 21 RCTs, including 29 sets of comparisons for a total of 25,699 patients with TNBC (Table 1). The median follow-up time was 44 months, and patients' median age was 62 years.

- Trial-level association
  - Analysis of the trial-level association between PFS and OS was based on 15 RCTs, including 19 sets of comparisons for a total of 6469 patients with TNBC (Table 2). The median follow-up time was 46 months, and the median age of patients was 62 years.

- Individual-level association
  - The findings support the use of PFS in the regulatory and reimbursement approvals of new neoadjuvant treatments for TNBC.

- Trial-level association
  - The model regressing log(PFS OS) on log(PFS OS) demonstrated a significant association, with an estimated coefficient of 0.7 (95% CI: 0.6, 0.8).

- Validation
  - Table 4 summarized the outcomes of the validation of the estimated individual-level association using data derived from a further meta-analysis of 4 trials for TNBC patients with on-treatment pCR rates complete). A variety of investigational neoadjuvant interventions were evaluated, including carboplatin in 8 RCTs, bevacizumab in 5 RCTs, nab-Pac + ddAC + pegfilgrastim in 3 RCTs, nab-Pac in 2 RCTs, and others in 4 RCTs. A weighted linear regression analysis on a logarithmic scale was performed between treatment arms or between arm was performed on the landmark PFS/OS for each RCT. Each trial was weighted by its sample size.

- Table 3 summarized the outcome of the validation of the estimated trial-level association using data derived from a further meta-analysis of 4 trials for TNBC patients with on-treatment pCR rates complete.

- Figure 3 showed the trial-level association between PFS and OS. The positive slope of the regression line indicated that there was a significant association between PFS and OS.

- The findings support the use of PFS in the regulatory and reimbursement approvals of new neoadjuvant treatments for TNBC.

- The findings support the use of PFS in the regulatory and reimbursement approvals of new neoadjuvant treatments for TNBC.